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ABSTRACT

The Subcommittee on 21st Century Competitiveness, Committee on Education and the Workforce to met on Thursday, March 15, 2001 at 10:06 a.m., in Room 2175, Rayburn House Office Building, Hon. Howard P. "Buck" McKeon, Chairman of the Subcommittee presiding, to hear testimony on the use of technology to improve student achievement.Under Committee Rule 12B, opening statements were limited to the Chairman and the ranking minority member of the subcommittee, with other statements included in the official hearing record. Contents include: Opening Statement of Chairman McKeon; Statement of Donald W. Ingwerson, Superintendent, Los Angeles County Office of Education, Downey, California; Statement of Susan R. Collins, General Manager and Senior Vice President BigChalk Inc., Berwyn, Pennsylvania; Statement of Denis P. Doyle, Co-Founder and Chief Academic Officer, SchoolNet, Inc., Chevy Chase, Maryland; and Statement of Mark Nixon, Executive Director, Education, AOL Interactive Services, Dulles, Virginia. Appendixes include: Written Opening Statement of Chairman McKeon; Written Statement of Donald W. Ingwerson; Written Statement of Susan R. Collins; Written Statement of Denis P. Doyle; and Written Statement of Mark Nixon. Includes a Table of Indexes. (AEF)

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IMPROVING STUDENT ACHIEVEMENT THROUGH TECHNOLOGY

ED 472 673

HEARING

BEFORE THE

SUBCOMMITTEE ON 21ST CENTURY COMPETITIVENESS OF THE

COMMITTEE ON EDUCATION AND THE WORKFORCE

HOUSE OF REPRESENTATIVES

ONE HUNDRED SEVENTH CONGRESS

FIRST SESSION

HEARING HELD IN WASHINGTON, DC, MARCH 15, 2001

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HEARING ON "IMPROVING ACADEMIC ACHIEVEMENT THROUGH TECHNOLOGY"

Thursday, March 15, 2001

U. S. House of Representatives

Subcommittee on 21st Century Competitiveness

Committee on Education and the Workforce

Washington, D.C.

The subcommittee met, pursuant to notice, at 10:06 a.m., in Room 2175, Rayburn House Office Building, Hon. Howard P. "Buck" McKeon [chairman of the subcommittee] presiding.

Present: Representatives McKeon, Isakson, Goodlatte, Osborne, Mink, and Solis.

Staff present: Blake Hegeman, Legislative Assistant; Cindy Herrle, Senior Budget Analyst; Dan Lara, Press Secretary, Patrick Lyden, Professional Staff Member; Michael Reynard, Deputy Press Secretary; Deborah Samantar, Committee Clerk; and Jo-Marie St. Martin, General Counsel.

Chairman McKeon. A quorum being present, the Subcommittee on 21st Century Competitiveness will come to order.

We're meeting today to hear testimony on the use of technology to improve student achievement.

Under Committee Rule 12B, opening statements are limited to the Chairman and the ranking minority member of the subcommittee. Therefore, if other members have statements, they may be included in the hearing record.

With that, I ask unanimous consent for the hearing record to remain open 14 days to allow member statements and other extraneous material referenced during the hearing to be submitted in the official hearing record.

Mrs. Mink. Mr. Chairman. I ask unanimous consent to make a statement at this point of the record.

Chairman McKeon. Without objection, then so ordered. I'll begin with an opening statement.

OPENING STATEMENT OF CHAIRMAN HOWARD P. "BUCK" MCKEON, SUBCOMMITTEE ON 21ST CENTURY COMPETITIVENESS, COMMITTEE ON EDUCATION AND THE WORKFORCE, U.S. HOUSE OF REPRESENTATIVES

Good morning. Welcome to today's subcommittee hearing on "Improving Student Achievement Through Technology."

As we work through the process of reauthorizing the Elementary and Secondary Education Act, in particular Title III, which houses most of the educational technology programs, I think it is important to highlight some of the successful educational technology efforts that are already underway.

Each of today's witnesses represents such an effort. These efforts range from the Los Angeles County Office of Education's Distance Learning Program to bigchalk, inc.'s online research services to AOL's literacy programs to SchoolNet, Inc.'s assessment and accountability services.

It is also important to note that education technology is not an end unto itself, but rather a powerful tool in a school's toolbox to increases student achievement.

However, just like any tool, if it is not used properly or is not fully integrated into the project at hand, it will gather dust and offer nothing in the way of student academic improvement.

At the federal level, we want to make sure that does not happen. So in the upcoming ESEA legislation, we will be increasing flexibility and targeting dollars to those who need them most.

This hearing will also focus on the Web-based Education Commission, which was a 16-member commission established in 1998 as part of the Higher Education Act. The Commission examined ways in which students can achieve the educational benefits of the

Internet and provided Congress with some compelling recommendations.

We are fortunate to have not one but two members of that Commission with us today, panelist Susan Collins and Vice Chair of the Commission, Johnny Isakson. He is Vice Chair of this committee.

I would now yield to Mrs. Mink for her opening statement. I look forward, hopefully, to working with her once we get a problem worked out on the committee. I turn the time over now to Mrs. Mink.

WRITTEN OPENING STATEMENT OF CHAIRMAN HOWARD P. "BUCK" MCKEON, SUBCOMMITTEE ON 21ST CENTURY COMPETITIVENESS, COMMITTEE ON EDUCATION AND THE WORKFORCE – SEE APPENDIX A

Mrs. Mink. Thank you, Mr. Chairman. Your reference to a problem that we have not yet been able to resolve is the reason that I must make as my statement today an explanation of why Democratic members of this committee on Education and the Workforce will not be participating in this subcommittee hearing today as a protest against the unfair way that the majority has created the jurisdictions of our various subcommittees.

When the Education and the Workforce Committee adopted its organization rules last month, the Republican majority voted unanimously to remove programs for historically black colleges and universities, Hispanic-serving institutions and tribally controlled colleges from the subcommittee that handles higher education, which is this one.

Every single Democrat on the Committee on Education and the Workforce opposed this ill-conceived and divisive decision on the part of the Republican majority.

Every Democratic member of the committee, black, Hispanic, Asian-Pacific and Native American, has spoken out against this separation, and the message should be clear and should not be ignored. And it is for that reason that the Democratic members of this committee have not yet organized and, in fact, there are no subcommittee members on the Democratic side of this particular subcommittee.

We have received an overwhelming number of letters and communications from presidents of minority-serving institutions all across the country expressing their strenuous objection to this committee action of carving out the historical black colleges and the Hispanic-serving institutions and the tribally controlled colleges out of the jurisdiction of this subcommittee to which you are all here and having testimony taken today.

This includes letters of opposition from a number of institutions and from our former distinguished colleague, William H. Gray, III, who now serves as President of the United Negro College Fund.

The committee should, in our earnest opinion, include all colleges in this newly created 21st Century Competitiveness Subcommittee. Is the majority trying to say that 21st century competitiveness excludes these institutions? They have made tremendous contributions to our country, to our educational offerings for our children. And if we are really intent on expanding higher educational opportunities and emphasizing the 21st

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century as a new thrust of our educational efforts, certainly these colleges and institutions should be included.

No college should be relegated to a subcommittee that deals predominantly with issues like juvenile justice, child abuse and the other subjects of similar nature.

We pledge, Mr. Chairman, and this is certainly not an affront on your leadership, your capacity to work with your Democratic colleagues, which you have demonstrated over the past that you have the greatest capacity, compassion and understanding of what it is like to be in the minority.

So this is not a personal statement against your leadership, but it is a statement against the Republican majority for failing to understand the severity of their separate action. And we pledge our efforts on this side to try to reach a fair compromise with the colleagues on your side in hoping that we may come together very soon as a full contributing, participating group of members of this full committee to help ensure that all colleges and all universities have an opportunity to participate in the serious deliberations that this subcommittee will be taking in the next two years.

Thank you. I'd like to yield to my colleague, Hilda Solis, to make her statement at this point.

Ms. Solis. Thank you, Mr. Chairman and members. Good morning. I, too, want to join in with Congresswoman Mink in her remarks here this morning. I think this is a very serious issue that many Americans have yet to really fully understand.

In fact, we hope under the new administration and working with the majority leaders that no child and no student be left behind. And the statements that are being made with respect to Hispanic-serving institutions, historically black colleges, and tribally controlled colleges not being allowed to be a part of the 21st Century Competitiveness Subcommittee I think really sends a very negative signal to the many students that I represent in my district.

Some of those college presidents that I represent in my community have sent letters as well. One of the largest institutions in my district, Cal State University Los Angeles, wrote a letter also in protest.

We have well over 16,000 to 20,000 students that attend that institution. I think if they were to hear that they would not be included in the 21st Century Competitiveness Subcommittee, I think that those individuals would be alarmed.

Also, I represent six other post-secondary institutions, including Don Bosco Technical Institute and College. I represent Rio Hondo Community College, where I served as a board member. We have well over 18,000 students attending there, most of whom are Hispanic. I would clearly ask and plead with the committee and the majority members here to please give this a second thought.

I know that the Chairman and I and others have talked about this, and I hope that we can work in partnership to bring all students up to pace with the best education that our society can give them. And as a member of this committee, I would just ask that we make that consideration available so that all institutions that we represent, regardless of

race, community, economic, socioeconomic status, that they be allowed to have a voice at the table. And with that, I would yield back the remainder of my time. Thank you.

Chairman McKeon. Thank you very much. We would invite you to stay. We would love to have your presence here at this very important hearing, but we understand if you decide not to.

This is something that we debated fully when we presented the rules, and I do not think it is something we need to go back over again. It is something that the leadership of the committee is working to try to resolve. We think it is unfortunate that this should mar the things that we're trying to do in education, but what we were trying to do is stress more education. We divided the committees into three committees, so we had to break up some of the Elementary-Secondary Ed Committee and some of the Higher Education Committee to form the three committees. We did it with an idea of being able to focus even more on historically black colleges and on Hispanic-serving institutions, and I think as we move forward that will become apparent.

With that, I would like to formally introduce each of our witnesses and begin with almost a constituent, Dr. Don Ingwerson from Los Angeles. He was appointed the Los Angeles County Superintendent of Schools in 1994. He was named National Superintendent of the Year in 1992 as Superintendent of Jefferson County Public Schools in Louisville, Kentucky. You know, I said Louisville instead of Louisville, the California pronunciation.

Additionally, Dr. Ingwerson was the recipient of the Harold W. McGraw, Jr. Prize in Education and has been named Outstanding School Executive four times by Executive Educator, the National School Board's Association Journal. Coming from Los Angeles and feeling his leadership, we are especially happy to have Dr. Ingwerson there serving in this position and here today to testify.

Then we will hear from Ms. Susan R. Collins. Ms. Collins is the General Manager and Senior Vice President for bigchalk, inc., an education company that assists the K-12 community on the web.

Prior to arriving in her current position, Ms. Collins has served as the Senior Vice President for Marketing, Professional Development and Strategic Planning at Josten's Learning Corporation.

Ms. Collins was also a member of the Web-based Education Commission. She attended Oregon State University where she received her master's degree.

Then Mr. Denis Doyle. Mr. Doyle is the Founder and Chief Academic Office of SchoolNet, Inc., a web-based education reform company that develops Internet solutions for performance-driven K-12 schools, districts and states.

In addition, Mr. Doyle is a writer, lecturer and advisor on education policy. He holds a Master's Degree in Political Theory from the University of California at Berkeley.

And finally, we'll hear from Mr. Mark Nixon. Mr. Nixon is Executive Director of Education for America Online, Inc. and is responsible for the development of AOL At

School, an online learning environment for K-12 classrooms.

He has more than 15 years of experience serving the educational community, especially in education-related software and administrative technology.

Before arriving at AOL, Mr. Nixon spent four years leading the Education Technologies of BDM, a systems integration and consulting firm.

These are four outstanding individuals representing many hundreds of others that are doing great things in education. We are really very appreciative of you being here today. We will begin now with Dr. Ingwerson.

Now you'll see that little light in front of you. It will go green, which means you have four minutes; and then when it goes to yellow, it means you have one minutes to wrap up; and when it goes red, look out.

We have your full testimonies, which will be inserted in the record, and you can use the time to summarize or however way you feel to best get your message across.

Dr. Ingwerson.

STATEMENT OF DONALD W. INGWERSON, SUPERINTENDANT, LOS ANGELES COUNTY OFFICE OF EDUCATION, DOWNEY, CALIFORNIA

Mr. Ingwerson. Good morning, Mr. Chairman and members of the subcommittee. I wish to thank you, of course, for the opportunity to address you today and to speak about our initiatives on teacher training and technology.

The Los Angeles County Office of Education, normally called LACOE, is one of the nation's largest intermediate regional education agencies. It provides curriculum support, business services and program innovation to 81 school districts, 1,700,000 students and over 77,000 teachers.

We face a crisis in California, and it threatens to dim the light of learning. The looming teacher shortage is history making. Over the next 10 years in California we will need an unprecedented quarter of a million new teachers. Let me put that in perspective. In 1995 in Los Angeles County, 9 percent of our teachers had emergency credentials. Putting a number on that is 5,325 teachers. Five years later in the year 2000, 21 percent of our teachers had emergency credentials. Putting a number on that, that's 16,722 teachers.

The Los Angeles County Office of Education decided to take a leadership position in this emergency and began to train teachers and others in this endeavor. Our county presently faces a need for 10,000 new teachers.

LACOE is dedicated to meeting this challenge by harnessing all traditional and, more importantly, non-traditional means. We want to harness that is in our power, to

prepare teachers for the classroom and students for the future.

These numbers may sound very big and impersonal. However, when you go visit a middle school and you see five classes of students uncovered with no regular teacher and no substitutes available, and the regular faculty teaching those students are on their planning period, you begin to see the problem that we are facing and how some things can fall through the cracks.

Let me share with you some of the elements of our plan. It is a plan that's solidly founded on current research and infused with the benefits of technology.

Finding thousands of new teachers is no easy task. The key element of the plan is our Teacher Regional Recruitment Center, and it is part of the statewide effort. The center aims to sign up to 2,000-plus new teachers in our county by the end of this year.

LACOE has been a leader in doing this because we've been using technology for a number of years, and we plan to dramatically broaden our traditional recruiting base with Internet-based virtual recruitment fairs. These online events will connect thousands of university and college education students worldwide to teaching opportunities through live call-ins. Prospective new teachers can get answers instantly from recruiting school districts.

However, even as we meet the need for new teachers, there must be new ways to support those new teachers. Half of all new emergency credentialed teachers drop out in five years. With professional support, that figure changes to 90 percent staying in the profession. Our Beginning Teacher Support and Assessment Program provides that support with a solid track record in serving new teachers at their most vulnerable point.

Another significant means of help is through what we call our MERET Reading Project. This project provides upper elementary and middle school teachers throughout Los Angeles County with hands-on, standards-based training to meet their professional needs.

We have just completed the first phase of the MERET project by training 25 mentor teachers experienced in reading instruction from 13 school districts. They form a core group of online mentors and moderators that will expand to more than 150 teachers in a professional development program based on California's new Reading-Language Arts framework.

MERET uses a mix of technologies, including satellite broadcast, multimedia and the Internet. These technologies allow participants to see a master teacher in action, view classroom strategies first-hand, and revisit the training as many times as they need. This is an online community of learners and nationally recognized scholars, with teachers actively sharing concerns, solutions, resources and ideas.

The ultimate goal is to develop mentor teacher packages of videos, web materials and technology that can be easily replicated in school districts throughout the state.

Another program called STELLAR, an online project, also uses the same multiple technologies approach as we use in the MERET program. However, the goal for this program is improving reading skills of English language learners in low performing

schools. STELLAR supports new and emergency credentialed teachers in selected hard-to-staff upper and middle grade schools.

Reaching far beyond California, our TEAMS program is the largest distance-learning provider for elementary grades in the United States. In satellite-broadcast professional development programs, TEAMS features on-air master teachers who provide standards-driven instruction in key subjects. They demonstrate to elementary school teachers how to more effectively teach in the areas of K-3 reading, math, science, history, social science and language arts.

Presently, TEAMS Distance Learning reaches more than 7,500 teachers nationwide.

One of our recent projects called nciteLA - ncite stands for the National Center for the Improvement of Tools for Educators in California. It's a web-based learning environment that helps children meet or exceed grade-level standards in reading and mathematics. It assists teachers in the use of research-based assessments, media, resources and technology tools.

Teachers can administer online assessments in their classes to diagnose student needs. They can immediately receive reports and recommendations to help them address those student needs. To add value to the site, they can access model lessons in print and video as well as communicate quickly with professional educators. One thousand seven hundred schools in the county have registered on the web, with 1,200 of those schools using to date.

NciteCA is also has a parent university, and it provides free training and resources for parents in English and Spanish so that their children can become successful learners. Ncite helps them better understand technology and become reading and math coaches for their children at home and elsewhere. It also offers activities such as interactive math quizzes. The Parent University is open and accessible to the entire community.

Technology is a tool that allows us to reduce the time and space involved in teacher training. Time is a precious commodity to teachers and through our integrated plan we can support teachers in their homes and in their classrooms, directly connecting them to mentors and resources.

I would like to summarize my comments today in three recommendations. First, in the area of leveraging and partnering we believe that federal initiatives should be based on the partnership between the U.S. Department of Education and our state and local agencies.

We fully endorse the involvement of parental leadership and the business sector in implementing our student achievement activities.

I don't believe Los Angeles County could have provided the level of technology that we have today without the support of businesses, parents and the local universities.

Secondly, in the area of accountability and student achievement, our programs are and must continue to be performance based with specific goals and objectives.

Otherwise, technology cannot be the support that it is.

We must measure and monitor the effectiveness of our programs that train teachers as well as those targeting students who are at risk of education failure.

Third, in the area of efficiency and effectiveness, regional assistance provides an important foundation on which to pursue technology initiatives. They help fill the gap between the philosophers and the classroom experience.

We can effectively recruit and support teachers by leveraging resources countywide. We are able to use the technical expertise of the Southern California Comprehensive Assistance Center, whose effective work with teachers is authorized by your committee. We appreciate that very much.

Finally, please know that it is our ongoing challenge to deploy the benefits of technology in a creative way that fully supports the needs of classroom teachers. We believe our children's future depends on it. We don't believe in any throwaway children. We don't believe in any throwaway teachers. We want to help both to be successful. Thank you.

WRITTEN STATEMENT OF DONALD W. INGWERSON, SUPERINTENDANT, LOS ANGELES COUNTY OFFICE OF EDUCATION, DOWNEY, CALIFORNIA – SEE APPENDIX B

Chairman McKeon. Thank you very much. Ms. Collins.

STATEMENT OF SUSAN R. COLLINS, GENERAL MANAGER AND SENIOR VICE PRESIDENT, BIGCHALK.INC., BERWYN, PENNSYLVANIA

Ms. Collins. Thank you, Mr. Chairman.

Good morning. I appreciate the opportunity to testify today. My name is Sue Collins. I'm the Senior Vice President and General Manager of bigchalk.com. It's a company that provides Internet products for kids and teachers. We have 32,000 schools in this country that use our products.

I'm also pleased to be here today representing the bipartisan Web-based Education Commission which, following a year of study, released its report *The Power of the Internet for Learning* in December 2000. Congressman Isakson was the Vice Chairman of the commission, and I really appreciate his leadership. He was a wonderful part of that commission experience for me.

The perspective I will share with you today is one based on my own 30 years of experience as a teacher, district and state level administrator, hardware and software company executive, and Commissioner of the Commission. I believe my testimony also reflects the views of the more than 200 education software and digital content SIIA-member companies that serve the K-12 market.

What makes the U.S. competitive is its intellectual capital and its citizens' capacity for innovation. Both intellect and ingenuity require a highly educated population, the path to which begins in our schools.

The congressional Web-based Education Commission, chaired by Sen. Bob Kerrey, spent the last year examining the educational opportunities and issues surrounding the use of the Internet. It is a technology that substantially widens the educational path.

The Commission held five public hearings with more than 100 witnesses, presented at national and international meetings, and in a timely application of the very technology we were studying received testimony from more than 250 additional witnesses via the Internet.

Here is what we found. The Internet enables education to center learning around the student instead of the classroom; to focus on the strengths and needs of individual learners; and really makes lifelong learning a practical reality.

As a result of these findings, the Commission believes a national mobilization is necessary. We issued a call to action which included making broadband accessible for all; supporting the continuous growth of educators to the uses of technology; creating the comprehensive research and development framework; developing high-quality content for online learning; and removing barriers that block full access to online learning resources while continuing the accountability for local taxpayer dollars; developing and adopting privacy and protection safeguards; and finally, to expand funding initiatives to support these policies.

In the interest of time, I would like to speak about three of them and what they really mean in classrooms. Imagine, if you will, a classroom where students are engaged in events as they are happening in the world, discussing late-breaking news and researching questions that arise.

The Internet makes that opportunity available today with programs such as Classroom Radio, a collaboration between my company and NPR. Every day last fall, Classroom Radio provide Internet-based audio news from NPR about the 2000 Presidential Election complete with grade-appropriate lesson plans matched to state and national standards.

Two important things make Classroom Radio valuable. The resource was available any time kids wanted to get to it, and the resources were so current that when the election failed to end we were able to keep providing up-to-the-minute information to teachers and students until it did; a very different environment than had the children been using a textbook.

Second, it's no surprise that the Internet, with its capacity to facilitate distance learning, now makes it easier and more convenient for teachers to improve their skills. What is surprising, and quite exciting, is the way the Internet enables other forms of professional development. For example, bigchalk has an innovative program called Generation Y in which teachers and students work together as partners to develop the technical skills they need to infuse technology throughout their school one lesson at a time. Generation Y, which was selected as an "Exemplary" program by the U.S.

Department of Education, uses Internet-based consultants and web communities to support the student-teacher teams.

Finally, access to broadband is critical to providing rich, interactive learning environments in multiple paths to understanding. Broadband will provide the fast access required for students to view images, watch video, listen to audio or gather data.

When all of our schools have reliable, high-speed connections to the Internet, our children will begin to have the access required to prepare them for the world that they will live in.

The Web-based Education Commission, along with the entire educational technology industry, encourages your support of federal policies and funding aimed at increasing access in a high-quality online content for students - and providing training and support for educators. In return, these policies must hold schools and educators accountable for ensuring that all students achieve to high standards and 21st century knowledge and skills.

Members of the Commission will be happy to work with you to make this a reality.

Thank you for the opportunity to be here. I'll answer any questions.

WRITTEN STATEMENT OF SUSAN R. COLLINS, GENERAL MANAGER AND SENIOR VICE PRESIDENT, BIGCHALK.INC., BERWYN, PENNSYLVANIA – SEE APPENDIX C

Chairman McKeon. Thank you. Mr. Doyle.

STATEMENT OF DENIS P. DOYLE, CO-FOUNDER AND CHIEF ACADEMIC OFFICER, SCHOOLNET, INC., CHEVY CHASE, MARYLAND

Mr. Doyle. Mr. Chairman, members, thank you for receiving me today. I am pleased to be able to share with you my views about education technology and how it may improve academic instruction for the nation's children.

Two years ago I co-founded, with Jonathan Harber, an education technology entrepreneur, a company called SchoolNet, Inc. We are devoted to the proposition that academic achievement can be improved, enhanced markedly through access to web-based tools. It is on that basis that I'd like to share my views today.

Together with broadband communications, the new technologies, both fixed and wireless, will transform education as they are transforming society as a whole. It would be hard to overestimate its potential. I'd like to highlight six areas in which IT, or information technology, will have a transforming impact on our schools.

First, and most important, in my view, is the strategic use of data for both administrative and pedagogical purposes. Data warehousing, the creation of a

comprehensive longitudinal, relational database, is a tool of vast power in an information rich environment like schooling. In the hands of discerning and thoughtful analysts, school data is the key to institutional renewal and significant academic improvement. When data is available on the web, students who are learning and those who are not can be spotted immediately. Accolades for those who are doing well and prescriptions for those who are not doing well can be instantly issued. The old business bromide is true in schooling as well, you get what you measure.

As important as the data itself is, instantaneous access is equally important. Parkinson's last law was "deadly is the deadliest form of denial," and this is nowhere more true than in schooling. Testing children in the spring and getting their scores in the fall works a cruel hoax on them. To improve academic achievement, test data must be available instantly.

Secondly is curricular, instructional and assessment alignment. Strange but true, today, alignment is the exception not the rule. Rare is the school that practices this simple precept. A fine example of an aligned instruction is the College Board's Advanced Placement examinations. Thoughtfully and carefully constructed, they are carefully aligned. As a consequence, the courses are highly effective and their measurements are highly effective. They are justly, widely admired.

Third is what I've come to call VES, virtual education space, or substantive communication opportunities within the education community. Schools like businesses and successful non-profits need to be able to use the power of the web to exchange ideas, share calendars and post information resources electronically. They need to escape the bounds of time and space imposed by the conventional bricks and mortar organization of modern schooling.

Fourth is content delivery. While the web will never replace books - I'm quite old fashioned, I use a fountain pen, drive a stick shift car - but books will be supplemented in dramatic and powerful ways for both teachers and students.

Textbooks, for example, will give way to original sources available over the web, an enormously powerful learning opportunity. Of course, the web is ideally suited to Internet-specific courseware; not talking heads, but courseware that uses the dynamic power of the web to present information multi-dimensionally; as well, structured web-based activities such as resource searches and web surfing in a selective way is an important way for youngsters to make progress.

Fifth is high stakes test alignment and certification. Aligned tests, offered in real time, are one of the most powerful tools known to reinforce good instruction, expose weak instruction and encourage genuine subject matter mastery. And so, carefully designed assessments, like exams for pilot's licenses or driver's licenses, can be used for certification in lieu of seat time. That has been the historic standard for much certification.

Sixth, and I think in some ways most important, is access to resources, both technical and substantive, which ordinary teaching and research cannot anticipate. By this I mean the combination of what gifted teachers call the "teachable moment" and the law of unintended consequences. We cannot anticipate all that we might. Serendipity is an important aspect of education. I mention it last, however, to honor the old adage that

chance favors the prepared mind. Know the basics and creativity may follow.

Taking a page from Sherlock Holmes' famous example of inductive reasoning, The Dog That Didn't Bark, let me also say a word about what it is not. Education is not about "teacher proofing" the classroom.

Finally, let me conclude by offering four quick areas of interest that I think the federal government could profitably explore. First, cost educational technology in its first issuance is expensive. It would be critically useful and important for the federal government to act as a banker for some early adopters, as a disinterested analyst for others, and as an honest broker for the larger school community.

A second content provision from the federal government's extraordinary arsenal of rich content includes such things as the U.S. Naval Academy's rich language instruction program. It could be commercially developed and exploited to good advantage for both the Navy and the nation as a whole.

Third, R & D, in sort of a surrogate entrepreneurship role that the federal government can continue to play effectively.

And finally, a comment if I may about an area which does not yet fall in this committee's jurisdiction, e-rate. Free or heavily subsidized access to Internet services for poor children is critically important if they are to be able to use the great power of the web beyond the bounds of their school building. Similarly, access to the instruments to get to the web for computing; if broadband is available, dumb terminals and web appliances are things that the federal government could underwrite under e-rate as it underwrites services and goods under Title I.

And finally, I would suggest you might consider subsidized or partially subsidized access to content for youngsters across the board. In particular, the poor and disadvantaged youngsters who need access to rich content perhaps more than any other students in our education system.

Let me close, then, by saying that the web offers the opportunity to transform the old mantra, "every child can," to a new mantra, one with real meaning, "every child shall learn." And I think through devices of that kind, we can in fact deliver on the twin promises of the Children's Defense Fund and the Bush administration's to leave no child behind.

Thank you for your time, and I'm sorry to have gone on at such length.

WRITTEN STATEMENT OF DENIS P. DOYLE, CO-FOUNDER AND CHIEF ACADEMIC OFFICER, SCHOOLNET, INC., CHEVY CHASE, MARYLAND – SEE APPENDIX D

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STATEMENT OF MARK NIXON, EXECUTIVE DIRECTOR, EDUCATION, AOL INTERACTIVE SERVICES, DULLES, VIRGINIA

Mr. Nixon. I'd like to thank the subcommittee members, especially Chairman McKeon, Representative Isakson for his work on the Web-based Education Commission, Representative Goodlatte for his known work on telecommunication issues, and Representative Upton for his continuing dedication to this issue as evidenced by his hearing on ed tech just last week.

My testimony is really in three parts. First, AOL's perspective on 21st century literacy; second, on AOL at school; and third, on suggestions on how we believe technology could further enhance learning in the future.

AOL is committed to ensuring that everyone can share in the benefits the Internet makes possible, and to building a medium of which we can all be proud.

We believe one of the most important ways we can fulfill this goal is to find new ways of using technology to improve education and enhance 21st Century learning.

Technology trends. We're beginning to make distance learning a rich and viable option. We are continuing to connect schools and libraries to the Internet and communities worldwide. The cost of devices both wired and wireless continues to come down. It's easier to distribute, access and update digital content. Availability of broadband is improving our capacity to deliver current content and live cybercasting, high quality video and multi-media.

In the future, and in many cases right now, digital content - like CD-ROMs, email, software, video-on-demand, online learning management systems, live online chat - will become commonplace in the classroom. Web-based digital books that can be updated often will be available. Students will be able to access information anywhere and anytime, and teachers will be able to expand and customize content based on students' interests.

Students will be able to design their learning experiences by manipulating information and creating their own multi-media applications.

Although AOL-Time Warner has many educational offerings like Time for Kids, Turner learning, CNN FYI and others, we're focused this morning on AOL@School. AOL is a free online learning tool that helps administrators, teachers and students take full advantage of the Internet's vast resources by doing what AOL does best in it's core business; organizing content in useable ways for its users.

We found that children and educators were frequently frustrated by the difficulty they had in locating and utilizing the high quality online content available on the web. We developed it in conjunction with educators, principals, parents and students from all over the country. We've organized it into six basic portals, or learning environments; primary school, kindergarten through second grade, elementary, middle school, high school, teachers and administrators. They each have an environment that aggregates the best content, resources and tools available for their area in an environment designed

specifically for them.

The site also includes age-appropriate content filtering, and teachers control student access to such tools as email and chat.

We took compliance with the Coppell legislation very seriously. We have made our service available on the web as well as with our software. We made it available on the web for free for home schoolers, public libraries, religious community centers, and also kids, parents and teachers wherever they had access. But we also offered software that would allow us to comply with the Coppell legislation, fulfilling our part in making sure the registration process was compliant. The second part involved offering email and chat instant messaging. The content filtering was for free but only at the discretion of local schools. They physically have to turn those features on in accordance with their parental consent policies and acceptable use policies.

AOL@School has over 300 partners providing content. One of the nice things about being a company like AOL is we can aggregate content. Because AOL@School is not a business venture, these contracts are basically cashless. If they have grade, content, resources and tools to offer the education community we aggregate them in our service. We do not charge them, and they don't charge us. It's just a better way to get the resources available to the hands of our students, teachers and parents.

At the primary school level, we have just introduced a first graphical search tool designed for primary school children, kindergarten through second grade. For the most part they are unable to type or spell properly. This easy to navigate environment employs friendly graphics, colorful images and playful animation to make research more intuitive and fun for the younger students.

We've also introduced a partnership with a company called Test U to provide the most comprehensive free online SAT prep course available on the Internet through AOL@School's high school portal. Students receive four weeks of curriculum material, diagnostic assessments of their strengths and weaknesses, and a final graded practice examination. We're very proud of this partnership, most specifically because of its ability to provide this type of service that was ordinarily only fee-based to any student that has access to the web through AOL@School.

AOL@School's been collaborating with state governors and state departments of education to develop individualized windows and tool bars that provide content correlated to state education standards. In Florida, Governor Jeb Bush called upon school administrators across the state to incorporate the AOL@School online learning system into their K-12 curriculum. Maryland and Virginia have endorsed AOL@School and are using the State Focus tool. It allows states to provide locally oriented information about topics such as state standards, right down to the school level.

We also are soon to announce a similar deal with the State Focus window in Colorado, Pennsylvania, and also with the Office of the Overseas Schools which is a department of the State Department.

Of the challenges ahead, we believe the following issues to be most pressing for the 21st Century literacy policy agenda. First is equity. 21st Century learning tools and resources must be made available to under-resourced schools and communities as well as

to learners with disabilities and other special needs.

The second is teacher quality. We must significantly increase the quality of professionalism and opportunities of the teaching profession. We note with approval the Web-based Education Commission's recommendations, and hope the Congress will heed its call for increased technology training and support for educators.

AOL supports requirements that teachers have expertise in substantive content areas, pre-service technology both in how to use technology and how to integrate it into the classroom, teachers receiving quality ongoing professional development in line with teacher and student standards, performance-based pay for teachers, greater career building opportunities, rewards for the acquisition of special skills, and the development of master teacher programs.

Third is basic literacy. 21st Century education must include new information on literacy as well as technology skills and other skills critical to success in the information age. In addition, there needs to be renewed interest - national focus on math and science education, particularly for women and minorities.

Technology. Technology must be integrated into teaching and learning at all education levels. AOL supports all students having equitable access to technology and Internet resources, teachers being trained to integrate new technologies, learning applications and adding new information sources into the core curriculum, and any time anywhere distance learning.

Family and community literacy is also important. Technology can allow the learning environment to be extended beyond the classroom into the home, thereby reaching not only children but also their parents at home and neighbors as well. AOL supports quality after-school programs, adult technology education, distance learning opportunities and community technology centers.

Research and best practices. We need a greater federal focus on research, learning, and how new technologies, learning applications and information resources can support and assess learning gains. Research should be closely tied to practical classroom applications and focused on identifying and disseminating best practices.

We respectively urge the committee to incorporate these technology-based solutions as a part of any future legislative effort so that we can assure that all children have access to a 21st Century education. It is the single most important investment we can make today for our future.

I'd like to thank you for having us again.

WRITTEN STATEMENT OF MARK NIXON, EXECUTIVE DIRECTOR, EDUCATION, AOL INTERACTIVE SERVICES, DULLES, VIRGINIA – SEE APPENDIX E

Chairman McKeon. Thank you very much. I was remiss earlier in not welcoming our newest committee member to the committee, Mr. Goodlatte. He's new to the committee and new to the subcommittee, but not new to the Congress. We came here together in 1992 and are classmates. Mr. Goodlatte has been very active on the Judiciary

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Committee, and has proven himself to be an outstanding legislator. He heads a technology task force, and has been a leader in Congress for reaching out to the technology field. I'm really happy to have him here on our committee.

I will begin the questions in the reverse order that you testified, and I'll try to make my questions brief so you will have time to answer.

One area of concern, Mr. Nixon, is when it comes to education technology, and the impact that it can have on reducing administrative costs. How does AOL@School assist administrators in taking full advantage of the Internet's vast resources?

Mr. Nixon. Well, one of the ways it does that is if you think of the current situation. We spent billions and billions of dollars getting connectivity and workstations in our schools. Yet, in using the Internet, they are forced to use generic browsers that aren't really designed for use in the classroom. One of the frustrations this leads to is teachers and students going to a search box, typing on anything, Abe Lincoln, and getting 30 million hits. Then spending their time trying to weed through what's available on it and how to incorporate it into their curriculum.

What AOL@school is trying to do, and we're in a unique position maybe to do this because we aggregate content - we have no propriety interest in the content in that we're providing a service that aggregates it and organizes it effectively so they can use their time more efficiently in the classroom especially.

So what we've done is create these portals that basically bring the best content, resources and tools that are available, already pre-screened by educators. This will allow teachers and students to know that they're one click away from resources that have already been evaluated, and already brought into an environment that makes it easier for them to use. So they're using their time more effectively in the classroom itself.

Chairman McKeon. Thank you. Mr. Doyle, if you could change the money and priorities that are made with respect to educational technology programs, what are the priorities needed to benefit student achievement?

Mr. Doyle. The priorities that benefit student achievement would be several. As I suggested in my testimony, the e-rate, although in some respects not universally popular, is a very powerful tool to bringing about access fro youngsters across the board. In particular youngsters who are the least advantaged, poor and dispossessed will need to be able to keep up with their counterparts by gaining access to Internet services through an ISP - the dial-up protocol might work. Other possibilities would include community carrels or other devices that would be non-school based, ideally putting equipment in the hands of youngsters so they could access the web from home.

Then I think perhaps most importantly, since the technology is not an end in itself, which content is designed to utilize the enormous power of the Internet, as I suggested, not just talking heads - as we used to think of the educational TV. - but rather the kind of graphing and sound and light and dynamic power that the web offers to bring instruction alive. To use a dreadful term, part of the power is the asynchronicity. That is to say the opportunity of kids to study when they want to, when they need to after regular hours in school.

I had the privilege of serving on the National Commission on Time and Learning, and one of the things we found in that work is that the typical American youngster gets much less academic exposure than his or her European or Asian counterparts. By way of illustration, a German or Japanese youngster, after completing rigorous high school course of study, will have had about 3,500 hours in demanding academic work. A typical American youngster will typically have less than 2,000. The web is a way to begin to readdress that balance and provide rich academic content to a much larger population of youngsters.

Chairman McKeon. Thank you. Ms. Collins, in your testimony, you mentioned your program called Gen Y in which teachers and students work together to develop the technical skills they need. Would you please explain in greater detail how this program works?

Ms. Collins. I'd love to. It's a great program. It actually came out of the need that's recognized in most schools where the expertise that is technical belongs to the children. I mean the children know more than the teachers in most cases. So what this does is it partners up students and teachers together to do something that teachers need to do, whether it's to do a lesson plan on volcanoes, a unit studying Shakespeare or any subject matter the teacher is involved in.

They then have the advantage of an offsite consultant that they work with on the Internet so that they don't have to have this sort of expertise between the two of them. Then they become part of this web-based community where there are all kinds of teachers and students partnering together across the country, and the teacher learns how to do the things from working with the student. The student gets the expertise on basically being in sort of an apprenticeship mode of helping the teacher put together what they are trying to do. Then it becomes part of the common lexicon of that community.

So it can happen with a teacher and a student in Olympia, Washington, and LAUSD could be in Pittsburgh and they communicate across the web. But it's a great program for taking advantage of kids knowing a lot about technology, teachers not being so sure of it, and then having the teachers actually get to what they are doing which is teaching children.

Does that make sense? Sort of?

Chairman McKeon. Yes.

Ms. Collins. If I could draw a diagram -

Chairman McKeon. Especially the part about the students knowing more than the teachers.

Ms. Collins. Yeah, that's -

Chairman McKeon. Mr. Isakson.

Mr. Isakson. Thank you, Mr. Chairman. Before I ask a question, I want to take the liberty if I can of acknowledging the tremendous work Susan Collins did on the Web-based Commission. The time, effort and sacrifices she made when we were in existence

and since by coming to Washington today and helping testify is greatly appreciated. I really enjoy being with her. I also want to acknowledge David Byron and Irene Spiro; you all raise your hands. They are the people that made us look good because they were our primary staff on the Web-based Commission.

I would be remiss if didn't acknowledge that Mr. Doyle began his career on the staff of George Miller, Sr. in the California legislature, the father of our distinguished member George Miller here. Congratulations on that.

I thought I would just tell them that they missed something by not coming today. They could have come to hear that.

Let me also commend Dr. Ingwerson on his testimony, particularly with regards to teachers and development. I think your testimony points out the real promise of the web in solving the insoluble, which in the past has been time, distance, space and access.

I wanted to ask you a question about the Stellar Program and the Merit Reading Program that you mentioned. I assume because of the multiple disciplines and technologies that broadband access is essential to the full utilization of those programs; is that correct?

Mr. Ingwerson. Yes, you are correct. It may not be quite so obvious in the beginning pilots and the beginning efforts, but when you start having best practices and showing model teachers teaching those units, you eat up a lot of band width.

Mr. Isakson. You may not have read the Web-based Commission report, but if you did, our primary first recommendation was for the government to facilitate fully having the promise of the web, wherever possible, through both satellite as well as hard wire broadband access around the United States of America. In terms of education, do you agree with that?

Mr. Ingwerson. Absolutely.

Mr. Isakson. In fact, isn't it true that without it the most underserved, who we worry about today, will be even more underserved in the future?

Mr. Ingwerson. That is correct.

Mr. Isakson. I appreciate that acknowledgment. We've got to stay focused on them.

The second recommendation of the Commission was with regard to teacher training. While I think you addressed training teachers for certification, training teachers to use technology in the classroom is also doable through the use of the web; is it not?

Mr. Ingwerson. I think it is, and we are demonstrating that is true in our case. I hesitate just a moment because I don't have access to all the research, but in our situation that is very true.

Mr. Isakson. Thank you.

Mr. Nixon, I'd like to ask you a question. I have a personal belief that the vendors have an advantage over the administrators of education, and I don't say that in the negative sense. You made a statement in your testimony with regard to best practices which really interests me.

I believe one of the things that the Department of Education in Washington could do with the existing resources is become a center for best practices of programs that work rather than a regurgitator of whatever research may be out there. Would you and Ms. Collins and Mr. Doyle - you're all in this business hopefully already making a profit, but hoping we get smart so you can really make a profit - would either one of the three of you, speaking for your companies, find it offensive if we worked for the Department of Education to actually be a certifier of best practices. Not a black-lister, not certifying what does not work, but the absence of somebody appearing might portend that there is a better program out there. Would you object to that at AOL?

Mr. Nixon. Absolutely not. In fact, one of the things we find most useful is exactly those best practices. When you get teachers online and they are able to collaborate with each other, what they really get excited about is being able to ask their colleagues: I have this issue, I have this problem; I did it this way, but I didn't get the results I wanted. How did you do it? They don't really want the research as much as they want proven practicable things that they can do in their classroom.

If you ask teachers the number one thing they want right now, it's time. If you think about what a teacher's day is, it does not stop at 3 o'clock. It certainly doesn't stop at 3:00 and it certainly doesn't stop at 10:00, because they are always working to try and figure out what they can do the next day, the next week. Having these best practices would save them enormous amounts of time and give them much more confidence and an ability to deliver them in the classroom. So I would support it wholeheartedly.

Mr. Isakson. Susan, would bigchalk be supportive of that?

Ms. Collins. Oh, I definitely think so. I mean I agree with Mark. I used to be one of those middle school teachers. What I really needed, particularly as a beginning teacher, were models and things that I could have done that I knew were effective. The only way I figured those out at that time was by doing them myself and saying did this work or did it not work. If I had the environment that Mark described where I could actually have the chance to look at some best practices, and particularly if I could do it in what you might think of as a multi-media format, I could see another teacher actually practicing or doing it with their own class. I could then say that would work with my kids or that would work if I did this, because I think everything has to be localized. But the notion of being able to share how things really work is a very viable one, and I think very necessary.

Mr. Isakson. I know my time is up. Mr. Chairman, at the risk of offending you I've got another statement to make for Mr. Doyle. Yes or no, would Schoolnet have the -

Mr. Doyle. We would encourage you strongly to do so. I serve on the TMSR, a review panel. TMSR has already done some of this, and it's been extraordinarily useful. They have videodisks or CD ROMs in which you can actually see examples of best practice. What a Japanese or German teacher does with a math solution is a very powerful learning tool for American counterparts and very useful and widely distributed.

Mr. Isakson. Lastly in spending my time, I want to really ask of you something. President Bush is, as you know, introducing a substantial education reform package that has substantial recommendations in terms of the use of the web and technology in education. I'm a personal believer that the private sector should be engaged in becoming advocates for our breaking through what we've done in the past in opening the door, and this bill is going to have a lot to do with it.

In particular, Mr. Doyle, and with your and I think also Mr. Nixon's comments about the digital divide and access; one of President Bush's recommendations is to add as an allowable use the CDBG block grant community development funds, allowable use for community technology centers in under-served communities. So the very after school access you all were talking about is available to everybody.

I know it is not a question, but I hope you all will follow the President's bill as it goes through this committee and overlook the things you don't agree with and find favor with the things you do. Please help us to make some reform in education in America.

Thank you, Mr. Chairman.

Chairman McKeon. Thank you. Mr. Goodlatte.

Mr. Goodlatte. Thank you, Mr. Chairman. Thank you for your kind welcome to the committee and subcommittee. I am very much delighted to be working with you. You have personally taken an interest in educational institutions in my district, and I look forward to working with you on this committee as well as with Mr. Isakson because I know both of you are very committed to this subject. I am very interested in the direction the subcommittee is now taking and focusing on technology and looking ahead. I like the name of the subcommittee from that standpoint too.

I have a very practical question. I have two teenagers, and I wonder, Dr. Ingwerson, if you could help me with this. I've watched them through all of their years in the public schools in Roanoke, Virginia, carry the most enormous book bags, 30 to 40 pounds worth of textbooks that they lug back and forth to school. I wonder if this is a part of your physical education program or whether you can tell me if any progress is being made in getting textbook companies to put their products online so that kids can have books either at home or at school, whichever is more practical, and in the other place get online.

It would seem to me that you could use the textbooks in new ways. You could link to other subject matters. You could do a whole lot more things with that textbook and make the learning experience even more interesting if you had access to them online. What is your interest in that, and what is your progress in getting that accomplished?

Mr. Ingwerson. I think we're in a great transition period right now where the American spirit is not quite ready to downplay the use of textbooks. I think textbook companies are already online with their materials, but I think it's a commerce question as much as anything else. At the local level, I don't think many parents and many community members are able to put their trust yet into the technology that hasn't really been validated for them. It may be validated for us. So I sincerely believe that what you are talking about is going to be prevalent before long.

In the meantime, we're going to have large backpacks with books in them. But the smarter districts, the smarter communities, the communities that are planning ahead will have that infrastructure in place that has the broadband, etc. that allows us to start using those avenues with trust and being able to deliver. Our teachers are now coming out of colleges and universities with better preparation. They are able to explain to students and parents that this is reliable. However, we're in a transition period. It is not available to all. And we all have a role in that.

Getting that broadband access is so important to teacher training. Online real training for teachers to see what the person next door is doing solves their learning problems.

The question is a good question. We just need to move the clock forward.

Mr. Goodlatte. Maybe they will get lighter gradually.

Mr. Ingwerson. They will.

Mr. Goodlatte. My real purpose is not to lighten the book bag so much as to give the opportunity to have access to those things. In that regard, Mr. Nixon, let me commend AOL for participating in Power Up, which is an effort to get access to lower income children in after-school type environments and weekend type environments where they can get access to the Internet. I would love to meet with you or somebody else at AOL and talk about some ideas I have in my congressional district that you could help with.

Let me ask you, Dr. Ingwerson had identified the key problem here in getting more of this online, and that is the inequities in access to the Internet. What thoughts do you have on that, and what progress are we making? Power Up is a good step in the right direction, but obviously not everybody has access to it. They certainly don't have equal access to getting online at home.

Mr. Nixon. Right. And Power Up is a wonderful example of that. I think we also need to open up our schools past the hour of three o'clock after investing all this money, infrastructure and technology in our school buildings. School buildings should be looked at as community learning centers not just a K-12 bricks and mortar environment.

We've made significant investments, and we can start leveraging that across the board.

Mr. Goodlatte. That's a very good point. My son's school has just started doing that with one teacher designated, who might be working later there anyway, to stay.

Mr. Nixon. Absolutely.

Mr. Goodlatte. It is an advanced learning environment, but they love to stay late and use the facility that I can't duplicate in my home.

Mr. Nixon. That's right. I'm going to forget whose quote this is, but there is a quote that I love that says, "Technology is only technology to those born before its introduction." Our kids don't look at it as technology; it's an inherent part of their lives. When I show them an eight-track tape - now I'm dating myself - that was technology to us, right? We

need to open up these centers and also make available things like AOL@School. AOL@School is trying to do this by making our service free, number one, and two, available from any browser anywhere. Not just opening up the school buildings or doing the Power Up community centers, but encouraging our public libraries, community centers, religious centers, or any place where we have technology and made the investment that these type of resources and tools are available, because not everybody has access at home yet. That's the big problem in looking at digital textbooks. They all have supplemental information online today, but we need not go too fast or we are going to pass up and make the digital divide even greater. Textbooks are a necessity today. 97 percent of our schools are connected to the Internet, but I almost challenge the panel to say how many classrooms they think that is. It's not 97 percent of our classrooms, and that's not 30 workstations in every classroom. It's not every kid walking home with a laptop. Until we have that kind of ubiquitous access, textbook publishers can't go fully online. They have to have printed materials for you.

Mr. Goodlatte. Thank you. Well, my time has expired, and I don't want to be kept after by the committee chairman on my first day with the committee. Thank you, Mr. Chairman.

Chairman McKeon. I think it is interesting how Mr. Nixon dated himself with eight-track tapes. I would date myself with a slide ruler. It is interesting how we've seen this step up, and now at an ever-accelerated pace on technology.

Mr. Osborne.

Mr. Osborne. Thank you, Mr. Chairman. I am sorry I have just arrived. We had three meetings at the same time, and that doesn't work very well. I'm going to come at this from a little different direction. I serve in a very rural district and wonder if any of you have had given much thought or have had much experience with providing service, particularly broadband services, to rural areas. How is it best done? I'm assuming maybe it is in somebody's level of expertise here, so I'd like to address that question to you.

Ms. Collins. Well, I mean I can talk a little bit about some things that have happened over the history of technology and education.

In probably the late '80s there were a number of programs that were put together specifically to serve rural areas. They came out of the Star Schools Program and some others where they provided direct video. It was one-way video and two-way audio kinds of programs. The Internet now is able to enhance that whole experience because you can actually do two-way video. You can do a number of different kinds of things.

The issues I think are facing the vendors on this side of doing that is the credentialing issues, a number of the credit issues and things that cross state lines prohibit us from serving populations in Nebraska and serving populations in the state of Washington because the requirements of the two states are different. Every state in this country has a different set of requirements for how they govern education.

One of the things that would be a terrific boost to this whole thing is if we could remove some of those that you might think of as legalistic barriers that really serve no purpose anymore.

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They were very appropriate in an age where every school, every child went to a school. They basically spent their entire career in a single school, graduated, and the teacher stayed there his or her entire teaching career. But now we have kids who move, we have subjects that move, and we have a whole variety of expertise that doesn't normally exist in a rural high school, like the opportunity to study Japanese or study calculus. Those kinds of things are great skills for the 21st Century and yet a local small rural school might not have the ability to have the capacity to teach that. So to sort of turn the whole subject around is this removal of barriers, which would contribute a lot to helping rural areas.

Mr. Osborne. Does somebody else have something in mind?

Mr. Doyle. The technology, as you know, is ideally suited to the problems of rural areas. I have just come from a site visit in Sweetwater in far western Wyoming, Green River, with two children, one school with 35 children, and there they use technology with extraordinary effect.

The two-student school is too far off to hardwire, so they have a satellite uplink-downlink. There, of course, the issue is delivering high quality content to youngsters in remote areas.

I might also add, however, that these same issues occur in densely populated urban areas. In Washington, D.C., for example, there is a consortium of institutions offering advanced placement courses. A public-private consortium, Sidwell Friends, St. Albans, Walt Whitman, Woodrow Wilson; for kids even in schools of this quality, they have a hard time creating a critical mass of enough youngsters to fill exotic advanced placement courses. In that case as well, distance learning is ideally suited so long as the quality is as high as it should be.

Mr. Nixon. You know, I also want to make sure we understand that there are compies such as those that are represented here. You're not a company, but it's very easy for us to move at the speed of light. The speed issue in regards to, especially the rural schools and any school district in the United States may not be something that this committee can address. But if I were to ask Susan how long it takes to adopt a textbook, how long would you say it takes to adopt a textbook in a normal state?

Ms. Collins. I will say six years cycle, and it takes at least a year of study across the state.

Mr. Nixon. And yet we're developing online content curriculum and resources that we want to make available right now. Yet, we're dealt with a process that doesn't lend itself to that.

In terms of taking distance-learning classes, whether it be a teacher, a student or a parent, especially the teacher and student, there are rules around certification. There are rules around the accreditation of the courses in terms of the student getting credit to the school. All of those processes in our schools are still so antiquated that they're not really set to accept the kind of bandwidth, resources, content and tools that we're ready to push to them.

So I don't know if it's part of this subcommittee's efforts, but it is something that we encourage you to kind of help push along at the local level as a way to incorporate these things more quickly into their policies.

Mr. Ingwerson. If I could comment a little bit on that, we provide distance learning out of Los Angeles County. We provide it to 20 states. In Boston, Massachusetts, they buy our service and curriculum for teaching students and teachers. The same is true in Mississippi, Colorado, and Utah. We've done that for 10 years, and we're growing with those agencies.

I would say that rural areas do have a problem, but they should not have a problem with proper planning now. It is a collaborative effort. It's to make sure that if you don't have the talent in a rural area, there are avenues now through distance learning or with a satellite, etc. that it can be provided and is being provided.

The wiring part on an Internet is, I think, the slowest element to come along, but even that can be taken care of through wireless.

Mr. Osborne. Thank you.

Chairman McKeon. Mr. Isakson?

Mr. Isakson. All of you said you didn't think it was within our purview on that last comment. I just wanted to comment to the Chairman and to Mr. Osborne and really all of our committee that what they were just saying is, in fact, one thing we have got to do. We have got to tear down the unintended consequences of the barriers of government regulation and accreditation rules that were adopted for a textbook Ozzie and Harriet world and modernize them, because we actually have laws and regulations and rules today that are impeding what we are trying to facilitate through hearings like this.

We are going to have some bills to do that, and it is probably our single biggest responsibility as a committee right now. So you are great to bring that up. Thank you.

Chairman McKeon. Well, our timing is excellent. We just got called for a vote on the floor. This will be the only hearing that this subcommittee will hold prior to the markup of our elementary and secondary education reauthorization.

I want to thank you for your valuable time. Thank you to both the witnesses and the members for their participation. I encourage you, if you think of something that you wanted to say as you leave here, to insert it in the record. The record will be open for 14 days. I also hope you will be available if we think of things to ask you later as we go through this process. This will be an ongoing thing that we are involved in.

If there is no further business at this time, the subcommittee then stands adjourned. Thank you.

[Whereupon, at 11:19 a.m., the subcommittee was adjourned.]

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APPENDIX A – WRITTEN OPENING STATEMENT OF CHAIRMAN HOWARD P. "BUCK" MCKEON, SUBCOMMITTEE ON 21ST CENTURY COMPETITIVENESS, COMMITTEE ON EDUCATION AND THE WORKFORCE

"IMPROVING STUDENT ACHIEVEMENT THROUGH TECHNOLOGY"
SUBCOMMITTEE ON 21ST CENTURY COMPETITIVENESS
CHAIRMAN BUCK MCKEON
OPENING STATEMENT – MARCH 15TH, 2001 – 10 AM

GOOD MORNING.

WELCOME TO TODAY'S SUBCOMMITTEE HEARING ON *"IMPROVING STUDENT ACHIEVEMENT THROUGH TECHNOLOGY."*

AS WE WORK THROUGH THE PROCESS OF REAUTHORIZING THE ELEMENTARY AND SECONDARY EDUCATION ACT, IN PARTICULAR TITLE III – WHICH HOUSES MOST OF THE EDUCATIONAL TECHNOLOGY PROGRAMS –, I THINK IT IS IMPORTANT TO HIGHLIGHT SOME OF THE SUCCESSFUL EDUCATIONAL TECHNOLOGY EFFORTS THAT ARE ALREADY UNDERWAY.

EACH OF TODAY'S WITNESSES REPRESENTS SUCH AN EFFORT. THESE EFFORTS RANGE FROM THE LOS ANGELES COUNTY OFFICE OF EDUCATION'S DISTANCE LEARNING PROGRAM, TO BIGCHALK INC.'S ONLINE RESEARCH SERVICES, TO AOL'S LITERACY PROGRAMS, TO SCHOOLNET, INC.'S ASSESSMENT AND ACCOUNTABILITY SERVICES.

IT IS ALSO IMPORTANT TO NOTE THAT EDUCATION TECHNOLOGY IS NOT AN END UNTO ITSELF, BUT RATHER A

POWERFUL TOOL IN A SCHOOL'S TOOLBOX TO INCREASE STUDENT ACHIEVEMENT.

HOWEVER, JUST LIKE ANY TOOL, IF IT ISN'T USED PROPERLY OR ISN'T FULLY INTEGRATED INTO THE PROJECT AT HAND, IT WILL GATHER DUST AND OFFER NOTHING IN THE WAY OF STUDENT ACADEMIC IMPROVEMENT.

AT THE FEDERAL LEVEL, WE WANT TO MAKE SURE THAT DOESN'T HAPPEN SO IN THE UPCOMING ESEA LEGISLATION, WE WILL BE INCREASING FLEXIBILITY AND TARGETING DOLLARS TO THOSE WHO NEED THEM MOST.

THIS HEARING WILL ALSO FOCUS ON THE WEB-BASED EDUCATION COMMISSION WHICH WAS A 16-MEMBER COMMISSION ESTABLISHED IN 1998 AS PART OF THE HIGHER EDUCATION ACT. THE COMMISSION EXAMINED WAYS IN WHICH STUDENTS CAN RECEIVE THE EDUCATIONAL BENEFITS OF THE INTERNET AND PROVIDED CONGRESS WITH SOME COMPELLING RECOMMENDATIONS.

WE ARE FORTUNATE TO HAVE NOT ONE BUT TWO MEMBERS OF THAT COMMISSION WITH US TODAY, PANELIST SUSAN COLLINS, AND VICE CHAIR OF THE COMMISSION CONGRESSMAN JOHNNY ISAKSON, WHO IS ALSO THE VICE CHAIR OF THIS SUBCOMMITTEE.

WITH THAT, I WOULD LIKE TO FORMALLY INTRODUCE EACH OF OUR WITNESSES.

APPENDIX B - WRITTEN STATEMENT OF DONALD W. INGWERSON, SUPERINTENDANT, LOS ANGELES COUNTY OFFICE OF EDUCATION, DOWNEY, CALIFORNIA

Donald W. Ingwerson
Superintendent, Los Angeles County Office of Education

Testimony Before House Education And The Workforce Subcommittee On 21st Century Competitiveness

Mr. Chairman and subcommittee members, I wish to thank you for this opportunity to appear before you to talk about our initiatives on teacher training and technology. The Los Angeles County Office of Education — or LACOE — is the nation's largest regional educational agency, providing curriculum support, business services, and program innovation to 81 school districts, 1.7 million students and over 70,000 teachers.

We face a crisis in California that threatens to dim the light of learning: a looming teacher shortage that is history-making. Over the next ten years, we will need an unprecedented quarter of a million new teachers in our state. In 1995, 9 percent of teachers in our County had emergency credentials (5,230); in 2000, that number had risen to 21 percent (16,722 teachers). The Los Angeles County Office of Education is taking leadership in this emergency with an integrated plan to recruit and train our share of new and current teachers.

Our County faces a need for 10,000 new teachers. LACOE is dedicated to meeting this challenge by harnessing all traditional and non-traditional means in our power to prepare teachers for the classroom and students for the future. These numbers may sound very big and impersonal. Yet they become very personal when you visit a middle school and there are five classes of students without teachers or

substitutes, and the regular faculty members are teaching these classes during their planning periods.

I will share some of the elements of our plan with you today. It is a plan solidly founded on current research and infused with the benefits of technology.

Finding thousands of new teachers is no easy task. A key element of the plan is our Teacher Regional Recruitment Center. Part of a statewide effort, the center aims to sign up 2,000-plus new teachers in our County by the end of this year. LACOE has been a leader in technology for many years, and we plan to dramatically broaden our traditional recruiting base with Internet-based virtual recruitment fairs. These on-line events will connect thousands of education students worldwide to teaching opportunities through live call-ins. Prospective new teachers can get answers instantly from recruiting school districts. However, even as we meet the need for new teachers, there must be new ways to support them.

Half of all new emergency credentialed teachers drop out in five years. With professional support that figure changes to 90 percent staying in the profession. Our Beginning Teacher Support and Assessment program provides that support, with a solid track record in serving new teachers at the most vulnerable point in their careers.

Another significant means of help is through the MERET Reading Project, or Mentoring for Expanding Reading Expertise through Technology. This provides upper elementary and middle schools teachers throughout Los Angeles County with hands-on, standards-based training to meet their professional needs.

We have just completed the first phase of the MERET project by training 25 mentor teachers experienced in reading instruction from 13 school districts throughout Los Angeles County. They form a core group of on-line mentors and moderators that will expand to more than 150 teachers in a professional development program based on the California Reading-Language Arts framework.

MERET uses a mix of technologies including satellite broadcast, multimedia, and the Internet. These technologies allow participants to see a master teacher in action, view classroom strategies first-hand, and revisit the training as many times as they need. This is an on-line community of learners and nationally recognized scholars, with teachers actively sharing concerns, solutions, resources, and ideas. The ultimate goal is to develop a mentor teacher package of videos, web materials, and technology that can be easily replicated in school districts throughout the state.

Our new STELLAR Online Project (Supporting the Teaching of English Learners in Language Arts/Reading) also uses the same multiple technologies approach as the MERET program. The goal for this program is improving the reading skills of English Language Learners in low performing schools. STELLAR supports new and emergency credentialed teachers in selected hard-to-staff upper and middle grade schools.

Reaching far beyond California, our TEAMS program is the largest distance learning provider for elementary grades in the United States. In satellite-broadcast professional development programs, TEAMS features on-air master teachers who provide standards-driven instruction in key subjects. They demonstrate to

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elementary school teachers how to more effectively teach: K-3 reading, Mathematics, Science, History-Social Science, and Language Arts. LACOE's master teachers help train thousands of teachers by satellite. TEAMS Distance Learning reaches more than 7,500 teachers nationwide.

nciteCA, the National Center for the Improvement of Tools for Educators/California, is a web-based learning environment to help children meet or exceed grade-level standards in reading and mathematics. It assists teachers in the use of research-based assessments, media, resources, and technology tools.

Teachers can administer on-line assessments to their classes to diagnose student needs. They can immediately receive reports and recommendations to help them address students' needs. To add value to the site, they can access model lessons in print and video as well as communicate quickly with professional educators. One-thousand-seven-hundred schools in the County have registered on the web, with 1200 registered users to date.

nciteCA's Parent University provides free training and resources for parents in English and Spanish so their children can become successful learners. Ncite helps them better understand technology and become reading and math coaches for their children. It also offers activities such as interactive math quizzes. The Parent University is open and accessible to the entire community.

Technology is a tool that allows us to reduce time and space in teacher training. Time is a precious commodity, and through our integrated plan we can support teachers in their homes and their classrooms, and directly connect them to mentors and resources.

I would hope my comments today point to three vital recommendations we offer for the subcommittee's consideration:

- First, we believe that federal initiatives in this area should be based on the partnership of the U.S. Department of Education and our state and local agencies. We fully endorse the involvement of parent leadership and the business sector in implementing student achievement initiatives.
- Second, our programs must be performance based, with specific goals and objectives. We measure and monitor the effectiveness of our programs that train teachers , as well as those targeting students who are at risk of educational failure.
- Third, regional assistance provides an important foundation on which to pursue technology initiatives. We can effectively recruit and support teachers by leveraging resources countywide. We are able to use the technical expertise of the Southern California Comprehensive Assistance Center, whose effective work with teachers is authorized by your Committee.

Finally, please know it is our ongoing challenge to deploy the benefits of technology in a creative way that fully supports the needs of classroom teachers. We believe our children's future depends on it. Thank you.

APPENDIX C - WRITTEN STATEMENT OF SUSAN R. COLLINS, GENERAL MANAGER AND SENIOR VICE PRESIDENT, BIGCHALK.INC., BERWYN, PENNSYLVANIA

Testimony of Susan R. Collins
Senior Vice President and General Manager, bigchalk.com
For the Web-based Education Commission
Before the House Committee on Education and the Workforce, Subcommittee on 21st Century Competitiveness
March 15, 2001

Good morning Mr. Chairman and members of the Committee. I appreciate the opportunity to testify before you today on the subject of improving student achievement through technology. My name is Susan Collins and I am Senior Vice President and General Manager of bigchalk.com, the leading provider of Internet-based tools for K–12--with offices in New York, Pennsylvania, Michigan, and Washington. I am also pleased to be here today representing the bipartisan Web-based Education Commission which, following a year of study, released its report in December, 2000. And I would especially like to thank Rep. Johnny Isakson for his leadership as the vice chair of the commission.

The perspective I will share with you today is one based on my own 30 years of experience as a teacher, district and state department of education administrator, and hardware and software company executive. I believe my testimony also reflects the views of the more than 200 education software and digital content SIIA-member companies that serve the K–12 market.

General comments

What makes the U.S. competitive is its intellectual capital and its citizens' capacity for innovation. Both intellect and ingenuity require a highly educated population—the path to which begins in our schools. All of our children, wherever they live, must be offered full opportunity to pursue that path.

The congressional Web-based Education Commission, established in 1998 and chaired by Sen. Bob Kerrey, spent the last year examining the educational opportunities and issues surrounding the use of the Internet—a technology that substantially widens the educational path.

The commission held five public hearing with more than 100 witnesses, presented at national and international meetings, and, in a timely application of the very technology being studied, received testimony from more than 250 additional witnesses via the Internet.

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The promise of the Internet for education, the commission found, is that it

- Centers learning around the student instead of the classroom,
- Focuses on the strengths and needs of individual learners, and
- Makes lifelong learning a practical reality

As a result of these findings, the commission believes a national mobilization is necessary.

Commission recommendations

You will find the commission's call to action in the executive summary of the report, which I have provided. Here are its recommendations.

1. Federal and state governments must make the extension of broadband access for all learners a central goal of telecommunications policy.
2. Policymakers at all levels must work with educational institutions and the private sector to support the continuous growth of educators through the use of technology.
3. The federal government must create a comprehensive research, development, and innovation framework for learning technology.
4. The public and private sectors must join forces in developing high quality content and applications for online learning.
5. Congress, the U.S, Department of Education, and state and regional education authorities must remove barriers that block full access to online learning resources, courses, and programs while ensuring accountability of taxpayer dollars.
6. Parents, the education community, and the private sector must develop and adopt privacy and protection safeguards to assure that learners of all ages are not exploited while participating in online learning activities.
7. The federal government, states, localities, and the private sector must expand funding initiatives and develop new models to bring these policies to reality.

I would like to focus for a moment on three areas—the development of high quality content and applications, professional development for teachers, and access—because they all have a direct impact on our educational competitiveness.

Support online content and applications

Imagine a classroom where students are engaged with events as they're happening in the world, discussing late-breaking news and researching questions that arise. The Internet makes that opportunity available today--with programs such as Classroom Radio, a collaboration between bigchalk and NPR, and CASKE, in which students experience, via the Internet, a sea kayaking expedition through Central America. In

Classroom Radio, daily programming from NPR, complete with grade-appropriate lesson plans matched to state and national standards—and augmented by bigchalk's database links—are stored on the website for downloading to classroom computers. Two important things make Internet-based Classroom Radio different from conventional radio: this rich resource is available *anytime*—today, next week, and next year—and the resources of the Internet, including searchable databases and learning communities, are just a mouse click away.

More support for high quality content will increase the effectiveness of online learning.

Support professional development

It's no surprise that the Internet, with its capacity to facilitate distance learning, now makes it easier and more convenient for teachers to improve their skills. What *is* surprising, and quite exciting, is the way the Internet enables other forms of professional development. For example, bigchalk has an innovative program, called Gen Y, in which teachers and students work together, as partners, to develop the technical skills they need to infuse technology throughout their school, one lesson at a time. Gen Y, which was selected as an "Exemplary" program for professional development by the U.S. Department of Education, uses Internet-based consultants and courses to achieve its goals. And the lessons developed by each student-teacher partnership are archived on the Web for others to use.

More support for Internet-based staff development will allow schools to maximize their use of technology in support of educational goals.

Support broadband access

In January 1999, the Federal Communications Commission (FCC) defined broadband as having the capability of supporting, in both directions, a speed in excess of 200 kilobits per second (kbps) in the last mile.

There are a variety of broadband technologies that schools can choose from. But the important point is that they all provide the fast access required for viewing images, watching video, listening to audio, or gathering data.

I am fortunate to have high-speed Internet access—and I took advantage of it to collect information for this testimony. When all of our schools have reliable, high-speed connections to the Internet, our children will begin having equal access to the resources it provides.

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Conclusion

I hope that my comments have helped illustrate the critical importance of the Internet for our schools and the necessity to educate our children for the 21st century.

The Web-based Education Commission, along with the entire educational technology industry, encourages your support of federal policies and funding aimed at increasing access and high quality online content for students—and providing training and support for educators. In return, these policies must hold schools and educators accountable for ensuring that all students achieve to high standards and gain 21st century knowledge and skills.

Members of the Web-based Education Commission will be happy to work with you to make this a reality.

Thank you for the opportunity to testify. I am pleased to answer any of your questions.

Susan R. Collins
Senior Vice President and General Manger, bigchalk.com
Supplementary information
March 15, 2001

bigchalk.com and the following bigchalk programs and projects were mentioned in the testimony:

bigchalk.com

bigchalk.com is a comprehensive education destination for the K-12 learning community, with both subscription-based and free learning tools for educators, parents, and students. bigchalk.com's vast array of research content, supplementary curriculum, assessment, professional development, and Web-community tools provide access to unparalleled instructional resources. bigchalk just received the SIIA (Software & Information Industry Association) Codie award for the Best Educational Web Site for Kids, and was recently named a Gold Award 2001 winner by *Curriculum Administrator* magazine.

Classroom Radio

Classroom Radio is an educational Web resource that brings NPR programming to America's classrooms. Using RealAudio, Classroom Radio (www.bigchalk.com/bc/npr) combines NPR audio reports from Morning Edition with Bob Edwards, All Things Considered, and Talk of the Nation with lesson plans for students in grades 5-12. To make it easy for students to find linked information, Classroom Radio lesson plans are archived, and accompanied by audio links to related NPR news stories. Links to bigchalk's vast database of resources are also provided.

CASKE (Central American Sea Kayak Expedition)

CASKE, a virtual expedition available on bigchalk.com, tracks the experiences of two adventurer-anthropologists as they kayak through the most remote regions of Costa Rica and Panama. Through free interactive coursework, exclusive content, and original lesson plans, CASKE helps students in elementary through high school learn about the people and environment of these regions as well as the expedition itself, an exciting three-year, 5000-mile sea kayak expedition from Baja, California, to the Darién Gap rain forest of Panama.

Gen www.Y

Gen www.Y is bigchalk professional development program that provides the opportunity for students and teachers to work together to infuse technology throughout a school. Through Gen www.Y, student/teacher partners develop information and technology literacy as well as skills in research, writing, presentation, teaching, and leadership. Then they collaborate to develop classroom lessons that use technology. Gen www.Y teaching materials include interactive online components, print, CD, and video, as well as

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consultant services. The U.S. Department of Education Technology Expert Panel recently designated Gen www.Y as an "Exemplary" program for professional development, one of two in the nation. Other web-delivered programs in the Gen YES (Youth & Educators Succeeding) family offer solutions to issues currently facing educators, such as developing leadership skills, supporting the technology infrastructure, and encouraging gender equity.

Committee on Education and the Workforce

Witness Disclosure Requirement – "Truth in Testimony"
Required by House Rule XI, Clause 2(g)

Your Name: SUSAN L. COLLINS

	Yes	No
1. Will you be representing a federal, State, or local government entity? (If the answer is yes please contact the Committee).		✓

2. Please list any federal grants or contracts (including subgrants or subcontracts) which you have received since October 1, 1998:

NONE

	Yes	No
3. Will you be representing an entity other than a government entity?	✓	

4. Other than yourself, please list what entity or entities you will be representing:

Web-based Education Commission
SIIA
bigchalk.com

5. Please list any offices or elected positions held and/or briefly describe your representational capacity with each of the entities you listed in response to question 4:

Commissioner, Web-based Ed. Committee
former Bd. member/chair of SIIA Policy Committee
Sr VP, General manager. bigchalk.com

6. Please list any federal grants or contracts (including subgrants or subcontracts) received by the entities you listed in response to question 4 since October 1, 1998, including the source and amount of each grant or contract:

NONE

	Yes	No
7. Are there parent organizations, subsidiaries, or partnerships to the entities you disclosed in response to question number 4 that you will not be representing? If so, please list:		✓

Signature: Susan L Collins Date: 3.13.01

Please attach this sheet to your written testimony.

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APPENDIX D - WRITTEN STATEMENT OF DENIS P. DOYLE, CO-FOUNDER AND CHIEF ACADEMIC OFFICER, SCHOOLNET, INC., CHEVY CHASE, MARYLAND

Improving Student Achievement Through Technology

The House Committee on Education and the Workforce, Subcommittee on 21st Century Competitiveness

Thursday March 15, 2001

Mr. Chairman and members, it is a pleasure to be here today to share my views about improving student achievement through technology. My name is Denis P. Doyle, and I am the CAO - Chief Academic Officer - and vice chairman of SchoolNet Inc, a for-profit education reform company. SchoolNet provides education accountability, alignment and communication tools over the WEB.

Because my professional background has a bearing on my views permit me to briefly describe it. I attended Berkeley in the 60s, where I earned degrees in Political Science. I spent the next ten years as staff to the California legislature. My first committee chairman was, as it happens, George Miller Sr., father of Congressman George Miller Jr.

I spent the next decade as a senior civil servant in the US Office of Economic Opportunity, then the US Office of Education concluding with the US Department of Education where I developed and oversaw major education research and demonstration projects including the star-crossed education voucher and experimental schools programs.

Then a decade in think tanks - Brookings, AEI, Hudson and Heritage - where I wrote a succession of books and articles about education reform, including *Winning the Brain Race*, with David Kearns, then Xerox CEO, and later Deputy Secretary of Education and *Reinventing Education*, with IBM CEO Lou Gerstner. Most recently I completed a book titled *Raising the Standard, an Eight-Step Action Guide for Schools and Communities* underwritten by a generous grant from the Walton Family Fund.

At the same time, I served for two years as a member of the National Commission on Time and Learning that produced *Prisoners of Time*, a report that I commend to you again today.

Finally, two years ago I co-founded with Jonathan Harber, an education technology entrepeneur, a for profit school reform company - SchoolNet Inc -- devoted to the proposition that the future of public school reform and renewal will be found on the World Wide Web. In this view we are not alone, and

without burdening you with a commercial message, I'd like to take a few minutes to sketch in why I think this is so.

First it is critically important to remember that IT is simply a tool, in precisely the way a hammer or saw or typewriter is a tool. It is a means not an end and must justify itself in terms of the benefits it confers. Permit me to quote the great humorist Robert Benchely: when asked "isn't it difficult to write?" he said, "Why no, you just sit down and write what ever occurs to you. It's the occurring that's hard."

Second education IT must be measured, as IT is in the rest of the economy, in terms of the money it saves and the efficiencies and improvements it makes possible. While it is true that technology appears to be a cost, it must be treated as an investment in human capital formation.

Third, if points one and two are honored, the IT revolution – including the laptop, the PC, the PDA (or hand held device) - together with broadband communication, both fixed and wireless - will transform education as it is transforming our larger society. It would be hard to overestimate its potential, and I would like to highlight six areas in which it will wield transforming power and improve student achievement:

- First and most important is the strategic use of data, for both administrative and pedagogical purposes; data warehousing – the creation of a comprehensive, longitudinal, relational database -- is a tool of vast power in an information rich environment like schooling. In the hands of discerning and thoughtful analysts, school data is the key to institutional renewal and significant academic improvement; when data is available on the WEB, students who are learning and those who are not can be spotted instantly, with accolades for those who are doing well and prescriptions for those who are not. The old business bromide is true in schooling as well: you get what you measure.

  As important as the data itself is, instantaneous access is equally important. Parkinson's last law was "delay is the deadliest form of denial," and this is nowhere more true than schooling. Testing children in the spring and getting scores in the fall works a cruel hoax on them. To improve academic achievement, test data must be available instantly;

- Second is curricular, instructional and assessment alignment; strange but true, today alignment is the exception not the rule. Rare is the school that practices this simple precept. Classic examples of sound alignment make the point. The College Board's AP or advanced placement program is

thoughtfully and carefully aligned and as a consequence is highly effective and widely admired. Indeed, my *alma mater*, the University of California, has announced its intention to abandon heavy reliance on the SAT and look to Achievement exams, including the AP, as an admissions' indicator;

- Third is VES, virtual education space, or substantive communication opportunities within the education community; schools like businesses and successful non-profits need to be able to use the power of the WEB to exchange ideas, share calendars, and post information resources electronically and escape the bounds of time and space imposed by hard copy; parents as well as teachers, principals and counselors should have browser-accessible access to student performance and behavior data, within a secure environment that protects privacy.

- Fourth is content delivery; while the WEB will never replace books, for many teachers and students it can replace – or significantly supplement – textbooks with original sources. It is a medium ideally suited to internet-specific course ware; not talking heads, but courseware that uses the dynamic power of the WEB to present information multi-dimensionally; as well, structured WEB-based research and WEB-crawls are tools offer enormous intellectual power;

- Fifth is high stakes test alignment and certification; aligned tests, offered in real time, are one of the most powerful tools known to reinforce good instruction, expose weak instruction, and encourage genuine subject matter mastery; so too, carefully designed assessments – like exams for pilot's licenses or driver's licenses – can be used for certification in lieu of seat time;

- Sixth and last is access to resources, both technical and substantive, which ordinary teaching and research cannot anticipate – by this I mean the combination of what gifted teachers call the "teachable moment" and the law of unintended consequences. We cannot anticipate all that we might, and serendipity is an important aspect of education. I mention it last to honor the old adage that chance favors the prepared mind. Know the basics and creativity may follow.

Taking a page from Sherlock Holmes famous example of inductive reasoning – *The Dog That Didn't Bark* – let me also say a word about what modern, education IT is not. It is not about "teacher proofing" the classroom, which was the great triumph of late 19th century and early 20th century education technology. To the contrary, the power of the education IT is to free the teacher to be more professional and less bureaucratic. Neither is IT about the triumphs of mass

production that made mass education possible. The promise of education IT is to restore education to its most important antique form, the royal tutor. Education IT can personalize the education process as surely as the royal tutor did.

The greatest example in history, of course, is Philip of Macedon, who hired Aristotle to tutor his young son, Alexander. It goes without saying that he did his job well. And this is precisely the promise of education IT. To personalize and rationalize – in the economist's sense of that term – education. To give each student what he or she needs when he or she needs it.

Permit me to conclude with four observations, one about "cost", one about content, one about "entrepreneurship" and one about e-rate.

First, cost. As Oscar Wilde famously said, "he knows the cost of everything and the value of nothing." So too with IT. It is easy to become seduced by bells and whistles, fancy functions, and performance promises that have little real utility. Mature IT applications must be subject to the same kind of cost-benefit calculus that other technologies are.

At the same time, we must recognize that in its formative period IT tends to be expensive; too expensive for many schools acting on their own. The Federal Government can play a constructive role as banker for some early adopters, as disinterested analyst for others and as honest broker for the larger school community;

Second, the Federal Government can be a systematic content provider from its own extraordinary resources. By this I mean more than your own Library of Congress, though the wealth of knowledge there is without peer. Let me offer one specific example that is worth pursuing – systematic and successful second language instruction. The government may not do many things well, but one thing it does very well indeed, is teach second languages to diplomats, consular officials, military officers and, one supposes, spies. The technologies already in use could be made available to a national, even international, audience. You need look no farther than the US Naval Academy language program.

Third Uncle Sam can act as a surrogate entrepreneur. For a variety of reasons public schools are not hospitable to entrepreneurship. They are cautious institutions working on tight budgets and the federal government has the sweep and scope to encourage systematic development of new ways and means to improve both instructional and administrative IT applications.

While it is true that local control is essential to education well being, it is also true that certain issues require scale to work. R & D is a quintessential example.

Fourth is e-rate, a program that is the process of delivering $6 billion to the nation's public and private schools – the first phase of its work it nearly accomplished. Though much remains to be done, by and large the nation's schools are wired for IT – the die is cast. What remains is the digital divide, or the limited availability of IT for the poor and dispossessed. There are three pieces to this puzzle that a new e-rate could address:

- Free or heavily subsidized access to ISP or Internet service providers from non-school locations: home, study or tutoring centers and community centers.

- Free or heavily subsidized availability of PC's, laptops, or "dumb terminals" for poor and near poor children. If broadband is available, "dumb terminals" -- a keyboard, screen and browser – are an attractive solution. But whatever is used, poor children must be given access to the power of the WEB.

- Third is subsidized access to *content* for poor youngsters and poor schools. The most obvious example would be content vouchers for such things as AP courses or LEP courses. As other WEB-based content is included the list will grow rapidly over time.

It is worth noting that these initiatives, taken together, make the argument about general-purpose vouchers moot. IT, broadly dispersed amongst all children, makes the distinctions between private schools, public schools and home schooling less and less important.

Finally, let me conclude by observing that IT can make the promise of mass education a reality by its power to personalize education; just as the mass produced work book made mass education possible, the nearly infinite capacity to deal with complexity makes it possible – using IT – to create an individualized learning plan for every student in America. That is the only way we can make a reality of the mantra *every child can learn*, and turn it into a political and cultural imperative: *every child will learn*. That is how we can deliver on the twin promises of the Children's Defense Fund and the Bush Administration *to leave no child behind*.

- End -

Committee on Education and the Workforce

Witness Disclosure Requirement – "Truth in Testimony"
Required by House Rule XI, Clause 2(g)

Your Name: DENIS P DOYLE		
1. Will you be representing a federal, State, or local government entity? (If the answer is yes please contact the Committee).	Yes	No X
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3. Will you be representing an entity other than a government entity?	Yes	No X
4. Other than yourself, please list what entity or entities you will be representing:		
5. Please list any offices or elected positions held and/or briefly describe your representational capacity with each of the entities you listed in response to question 4:		
6. Please list any federal grants or contracts (including subgrants or subcontracts) received by the entities you listed in response to question 4 since October 1, 1998, including the source and amount of each grant or contract: NONE		
7. Are there parent organizations, subsidiaries, or partnerships to the entities you disclosed in response to question number 4 that you will not be representing? If so, please list:	Yes	No X

Signature: Denis P Doyle Date: 3/13/01

Please attach this sheet to your written testimony.

APPENDIX E - WRITTEN STATEMENT OF MARK NIXON, EXECUTIVE DIRECTOR, EDUCATION, AOL INTERACTIVE SERVICES, DULLES, VIRGINIA

TESTIMONY SUBMITTED BY

MARK NIXON

EXECUTIVE DIRECTOR OF EDUCATION

AMERICA ONLINE, INC.

TO THE

HOUSE EDUCATION AND WORKFORCE COMMITTEE

SUBCOMMITTEE ON 21ST CENTURY COMPETITIVENESS

MARCH 15, 2001

On behalf of America Online (AOL), I appreciate the opportunity to address this committee and discuss our shared goals of advancing 21st Century literacy and learning. America Online, an Internet services company based in Northern Virginia, is committed to building a medium that provides enormous benefits to our children and our society.

My testimony today is organized in three sections: First, I will offer AOL's perspective on 21st Century literacy; second, I'll discuss how AOL@School -- a new free online learning tool we developed with the help of hundreds of educators -- is an effective tool to help administrators, teachers, and students take full advantage of the Internet's vast resources; and finally, I'll suggest some ways in which we believe technology can further enhance learning in the future.

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When Steve Case started America Online over a decade ago, few believed that interactive technology was more than a hobby for computer enthusiasts. Now there is universal acknowledgement that the online medium is leading a profound social and economic revolution, both in the United States and around the world.

At AOL, our mission is to build a global medium as central to people's lives as the telephone or television … and even more valuable. Just as important, we are committed to ensuring that everyone can share in the benefits the Internet makes possible – and to building a medium of which we can all be proud.

21st Century Learning

We believe that one of the most important ways we can fulfill this goal is to find new ways of using technology to improve education and enhance 21st Century learning. In just a few short years, we have made quantum leaps in connecting schools and libraries to the Internet – and we are now on the verge of having achieved worldwide-connected communities. Several technological improvements are making this possible, including:

- The cost of devices, both wired, and wireless, continues to come down
- It is becoming even easier to distribute, access and update digital content.
- And the deployment of broadband is already vastly improving our capacity to deliver current content, live cybercasting, high quality video and multi-media.

These trends are beginning to make "distance learning" a rich and viable option. And in the future, further advances will make the vision of "anytime, anywhere, anyone" learning a reality. Learning in the future will be based on collaboration, without boundaries based on time or place, making communication with experts and other cultures virtually unlimited.

And that's just the beginning. Interactive Technology is making a range of new resources possible that will further enhance learning in the 21st Century.

Digital education content – like CD-ROMs, email, software, video-on-demand, online learning management systems, live online chat – will become commonplace in the classroom; and may even help solve old problems school districts have long struggled with.

For example, web-based, digital books will solve the perennial problem of obtaining the most up-to-date learning materials. No longer will 21st Century students have to make due with ten-year-old textbooks gathering dust on bookshelves. The Web will provide the connectivity for updates of digital content that keeps it fresh, dynamic and engaging.

Imagine an educational experience where students can access information without limitations of location or time … where content is expandable both vertically and horizontally and can be customized based on students interests … and where, instead of

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passively receiving information, students can actually redirect and redesign their learning experience by manipulating information and creating their own multimedia applications.

This is not a vision of the distant future. It's a world that is very nearly within our children's reach – if we work together to make it so.

AOL@School

It was with this idea in mind that we set about to develop AOL@School -- a free online learning tool that helps administrators, teachers, and students take full advantage of the Internet's vast resources.

After much research and discussion with educators, it was clear to us that children and educators were frequently frustrated by the difficulty that they had in locating and utilizing the high-quality online content available on the Web.

To develop this learning tool, we ourselves had to go through a process of learning – consulting with educators, principals, parents and students themselves to see what was really needed.

We believe that AOL@School represents a quantum leap in helping teachers integrate technology successfully into the classroom – and opening up a world of information and learning for students.

AOL@School is organized into 6 portals: primary, elementary, middle school, high school, teachers and administrators. With the help of a team of educators, we have culled the best education content for each group and given users one-click access to it. And we've included all sorts of additional hands-on tools – from lesson plans and reading lists to online encyclopedias and dictionaries to personal calendar programs. It's even got a calculator.

This online tool takes what AOL does best – aggregating good content and making it easy to use – and does it for free for the school audience. All the content on the site has been rigorously screened by educators and the site has built-in, age-appropriate filtering. In addition, AOL@School allows teachers to control the extent to which students have access to such tools as email and chat. AOL@School is also available online to students and teachers at home, parents, and homeschoolers.

To date, AOL@School has 300 partners providing content. These partners do not pay AOL to be part of AOL@School, nor do they receive payment from users accessing their content. This arrangement shows the depth of commitment to ensuring the availability of quality on-line content shared by AOL@School and its partners.

We are very proud that states and school districts are making use of AOL@ School to enrich the quality of education they provide their students.

One of the keys to AOL@School's success has been its collaboration with state governors and state departments of education. AOL@School has worked closely with several states to develop individualized windows and tool bars that provide content correlated to state educational standards. For example, last November, Florida Governor Jeb Bush called upon school administrators across the state to incorporate the AOL@School online learning system into their K-12 curriculum. The Governor underscored the benefits of the program when he said, "We want to make every effort to give our children the opportunity to succeed in the 21st Century, and I believe we are taking an important step in that direction by incorporating AOL@School into the classroom experience."

Other states such as Maryland and Virginia have endorsed AOL@School and are taking advantage of a feature that allows the states themselves to communicate important information directly to schools. It is called the State Focus feature, and states can use it to provide locally oriented information, about topics such as state standards, right down to the school level.

We are also working together with leading education and technology companies to expand and enhance AOL@School.

In January, we announced an agreement with Dell, the number one provider of computers to K-12 schools in America, to provide the free AOL@School service preloaded on all computers that it sells to K-12 schools in the United States.

In February, we announced an agreement with TestU to provide the most comprehensive free online SAT prep course available on the Internet through AOL@School's high school portal. Through this partnership, students are provided four weeks of curriculum material, diagnostic assessments of their strengths and weaknesses, and final, graded practice examinations. We are especially excited that this tool expands access to SAT prep to underserved communities who may not have been able to afford it in the past.

Earlier this year, AOL@School also added the first graphical search tool designed for primary school children, who for the most part are unable to type or spell properly. This easy to navigate environment employs friendly graphics, colorful images and playful animation to make research more intuitive and fun for the youngest students.

As you can see, AOL@School is continually fine-tuning, expanding and updating this tool based on input from education professionals, students and parents. I encourage you to visit us on the web at www.school.aol.com.

But AOL@School is only one program; there need to be many more.

First, companies that already produce content should seek to make it available in a digital format. As content is digitized, companies should work with educators to ensure that these formats meet existing educational standards, both with regard to technical and research skills, as well as core competencies. Educational institutions should also

consider purchasing digital content that meets these standards rather than relying on teachers to research and aggregate existing online content as an incentive to promote integration. And above all, there must be consensus in the community, from educators and content providers that digital content is an education priority for the 21st Century.

Other AOL Time Warner "Best Practices"

We believe that AOL Time Warner and its Foundation, through its people, products, programs and partnerships, can have a great impact on families. We are focusing our efforts in three areas: at home, in schools, and through our communities. We are working to raise parents' basic and 21st Century literacy skills and empower them to get involved in their kids' education. We are developing efforts to support teachers and strengthen the curriculum. And finally, we are working to provide strong, high quality after school opportunities in the communities where children need them most. We are committed to building a powerful portfolio of 21st Century Literacy initiatives designed to help parents, teachers, and children.

These initiatives range from:

- Here in Washington, D.C., the AOL Time Warner Foundation is partnering with Trinity College and the District of Columbia Public Schools to build a corps of technology-trained teachers and administrators. Participants take part in an intensive two-week technology leadership camp where they gain hands-on experience in using

technology in the classroom. The program enables these teachers to serve as peer mentors in their schools to help pass their expertise onto other teachers.

- PowerUP, a unique partnership to give underserved youth access to technology and guidance on how to use it. Based in schools and community centers around the country, PowerUP provides young people with access to the wide range of content and information on the Internet, and helps them develop skills they need to succeed in the 21st Century.

These initiatives and many others are the focus of AOL's efforts to equip kids for a better future and help teachers to leverage the use of technology in the classroom.

The Challenges Ahead

As Congress and the Administration begin to examine federal education reform, we urge that there be an increased emphasis on 21st Century Literacy and on the tools and competencies that it requires.

We believe the following issues to be most pressing for the 21st Century Literacy policy agenda:

Equity: The new Century offers opportunity to bring all Americans more fully into economic and civic life. To realize that opportunity, federal education policy must

continue to place an emphasis on equity. 21st Century learning tools and resources must be made available to under-resourced schools and communities as well as to learners with disabilities and other special needs.

Teacher Quality: Federal education policy must reform education for the 21st Century with the aim of significantly increasing the quality of professionalism and opportunities of the teaching profession.

Not only must education programs require expertise in substantive content areas, but also they must train teachers in how to integrate new technologies and new information literacy skills into a standards-based curriculum. Towards that end, we encourage funding for initiatives that support pre-service technology training at schools of education. Moreover, there must be significant new investment in quality ongoing professional development aligned with teacher and student standards. Finally, greater professionalism must be encouraged through performance-based pay, greater career building opportunities, rewards for acquisition of special skills and development of master teacher programs.

We note with approval the Web-Based Education Commission's recommendations and hope that Congress will heed its call for increased technology training and support for educators.

Basic Literacy: 21st Century education must not only continue to pursue 20th Century literacy skills, reading, writing and math, but must also include new information literacy and technology skills and other skills critical to success in the information age. Curricula in all "literacy" must be substantially composed to reflect not only the new competencies but new ways of learning as well.

In addition, there needs to be a renewed national focus on math and science education, particularly for women and minorities. Students must be prepared not only to work in the 21st Century, but also to drive innovation and prosperity.

Technology: Technology must be integrated into teaching and learning at all education levels. All students should have equitable access to technology and to powerful new Internet resources. Teachers must be trained to integrate new technologies, learning applications and new information sources into the core curriculum. In addition, there must be a new emphasis on supporting "anytime anywhere" distance learning, while supporting protection of copyright laws, and encouraging collaboration across state lines and among diverse education institutions to bring new modes of learning and diverse courses to all students.

Family and Community Literacy: In order to achieve 21st Century Literacy, we have to build a "learning society" which extends the learning environment beyond the four walls of the classroom and reaches not only children but their parents at home and neighbors as well.

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Children need to have access to new technologies outside of school through quality after school programs that provide a safe environment, mentoring and an opportunity to build 21st Century Literacy skills. Parents need more opportunities to participate in their children's education through the use of improved communication and information skills, and to continue their own education and obtain new workforce skills though access to computers, distance learning, adult education programs, and community technology centers. Finally, all citizens must have opportunities for life long learning so that regardless of age, location or economic status, they may participate fully in the rapidly changing society.

Research and Best Practices: New learning tools and the need for new literacy skills require a greater federal focus on research on learning and how new technologies, learning applications and information resources can support and assess learning gains. At the same time, that research must be closely tied to practical applications that can make a difference in the classroom. Research should also be focused on identifying and disseminating best practices to assure that successful models are replicated and brought to scale.

The digital age provides us with remarkable new technologies and tools, but it also demands new standards and strategies for making use of these developments … and a renewed commitment to ensure that all of our children can make the most of their potential in the 21st Century.

Fig. 1.

We respectfully urge the Committee to incorporate these technology-based solutions as a part of any future legislative effort -- so that we can ensure that all children have access to a 21st Century education. It is the single most important investment we can make today – for our future.

Again, thank you for the opportunity to share the perspective, vision and achievements of AOL@School. We look forward to working with the members and staff of this Subcommittee to help America improve 21st Century learning for students, parents, teachers and administrators.

Committee on Education and the Workforce

Witness Disclosure Requirement – "Truth in Testimony"
Required by House Rule XI, Clause 2(g)

Your Name: MARK A NIXON		
1. Will you be representing a federal, State, or local government entity? (If the answer is yes please contact the Committee).	Yes	No X
2. Please list any federal grants or contracts (including subgrants or subcontracts) which you have received since October 1, 1998: NO		
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Signature: _____ Date: 3/15/01

Please attach this sheet to your written testimony.

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